Receipt date: 11/21/20091 NOV 2 1 2007

> US-US-

PTO/SB/08A (04-07) Approved for use through 09/30/2007. OMB 0651-0031 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork persons are required to respond to a collection of information unless it contains a valid OMB control number MOENN Complete if Known Substitute for form 1449/PTO

Attorney Docket Number

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Application Number 10/576,134 Filing Date July 13, 2007 First Named Inventor Enrique V. Barrera Art Unit 1713 **Examiner Name** Unknown 11321-P074WOUS

Sheet **U. S. PATENT DOCUMENTS** Examiner Name of Patentee or Pages, Columns, Lines, Where Cite **Document Number** Publication Date Initials MM-DD-YYYY Applicant of Cited Document Relevant Passages or Relevant Figures Appear Number-Kind Code^{2 (if known)} ^{US-} 5,374,415 12-20-1994 Alig et al ^{US-} 6,645,455 /P.C. 11-11-2003 Margrave et al US-US-US-US-US-US-US-US US-US-US-US US-US-

		000000000000000000000000000000000000000	200000000000000000000000000000000000000	000000000000000000000000000000000000000		┝
500009200099555	9052000000000	9999999999999999999				L
/P.C./		WO 05/030858	04-07-2005			
<u>/P.C./</u>		WO 05/028740	03-31-2005	Margrave et al		
	NO.	Country Code ³ "Number ⁴ "Kind Code ⁵ (if known)	Date MM-DD-YYYY	Applicant of Cited Document	Where Relevant Passages Or Relevant Figures Appear	Т
	Cite No.1	Foreign Patent Document	Publication	Name of Patentee or	Pages, Columns, Lines,	

Examiner Date /Peter Choi/ 10/16/2009 Signature Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹Applicant's unique citation designation number (optional). ²See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

PTO/SB/08B (09-06)

Approved for use through 03/31/2007. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number. Complete if Known Substitute for form 1449/PTO **Application Number** 10/576,134 INFORMATION DISCLOSURE Filing Date July 13, 2007 STATEMENT BY APPLICANT First Named Inventor Enrique V. Barrera Art Unit 1703 (Use as many sheets as necessary) **Examiner Name** Unknown Attorney Docket Number Sheet 2 11321-P074WOUS 5 of

Examiner	Cite	NON PATENT LITERATURE DOCUMENTS Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of	
Initials*	No.1	the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T²
	1	lijima, "Helical microtubules of graphitic carbon," Nature (1991) 354, pp. 56-58	
	2	lijima et al, "Single-shell carbon nanotubes of 1-nm diameter," Nature (1993) 363, pp. 603-605	
	3	Bethune et al, "Cobalt-catalysed growth of carbon nanotubes with single-atomic-layer walls," Nature (1993) 363, pp. 605-607	
	4	Calvert, "A recipe for Strength," Nature (1999) 399, pp. 210 -211	
	5	Thostenson, "Advances in the science and technology of carbon nanotubes and their composites: a review," Composite Science and Technology (2001) 61, pp. 1899-1912	
	6	Schadler et al, "Load transfer in carbon nanotube epoxy composites," Appl. Phys. Lett. (1998) 73, pp. 3842-3844	
	7	Ajayan et al, "Single-Walled Carbon Nanotube-Polymer Composites: Strength and Weakness," Adv. Mater.(2000) 12, pp. 750-753	
	8	Khabashesku et al, "Chemistry of Carbon Nanotubes," Encyclopedia of Nanoscience and Nanotechnology (2004) 1, pp. 1-47	
	9	Khabashesku et al, "Fluorination of Single-Wall Carbon Nanotubes and Subsequent Derivatization Reactions," Acc. Chem. Res. (2002) 35, pp. 1087-1095	
	10	Bahr et al, "Covalent chemistry of single-wall carbon nanotubes," J. Mater. Chem. (2002) 12, pp. 1952-1958	

Signature Considered 10/16/2009	Signature // Otol Onlow	1	10/10/2000
---------------------------------	---------------------------	---	------------

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO:** Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

PTO/SB/08B (09-06)

Approved for use through 03/31/2007. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
of a collection of information unless it contains a valid OMB control number.

Substitute	Substitute for form 1449/PTO			Complete if Known		
Cabolitate	, 101 101111 1 1 1 1 1 1 1	.0		Application Number	10/576,134	
INFC	RMATIC	ON DIS	CLOSURE	Filing Date	July 13, 2007	
STATEMENT BY APPLICANT				First Named Inventor	Enrique V. Barrera	
	(Use as many sheets as necessary)			Art Unit	1703	
(USO as many sneets as necessary)			cossaiy)	Examiner Name	Unknown	
Sheet	3	of	5	Attorney Docket Number	11321-P074WOUS	

		NON PATENT LITERATURE DOCUMENTS	
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T²
	11	Hafner et al, "Catalytic growth of single-wall carbon nanotubes from metal particles," Chem. Phys. Lett. (1998) 296, pp. 195-202	
	12	Cheng et al, "Bulk morphology and diameter distribution of single-walled carbon nanotubes," Chem. Phys. Lett. (1998) 289, pp. 602-610	
	13	Nikolaev et al, "Gas-phase catalytic growth of single-walled carbon nanotubes from carbon monoxide," Chem. Phys. Lett. (1999) 313, pp. 91-97	
-	14	O'Connell et al, "Band Gap Fluorescence from Individual Single-Walled Carbon Nanotubes," Science, (2002) 297, pp. 593-596	
	15	Bachilo et al, "Structure-Assigned Optical Spectra of Single-Walled Carbon Nanotubes," Science (2002) 298, pp. 2361-2366	
	16	Strano et al, "Electronic Structure Control of Single-Walled Carbon Nanotube Functionalization," Science (2003) 301, pp. 1519-1522	
	17	Chiang et al, "Purification and Characterization of Single-Wall Carbon Nanotubes," J. Phys. Chem. B (2001) 105, pp. 1157-1161	
	18	Chiang et al., "Purification and Characterization of Single-Wall Carbon Nanotubes (SWNTs) Obtained from the Gas-Phase," J. Phys. Chem. B (2001) 105, pp. 8297-8301	
	19	Liu et al., "Fullerene Pipes," Science (1998) 280, pp. 1253-1256	
	20	Gu et al, "Cutting Single-Wall Carbon Nanotubes through Fluorination," Nano Lett. (2002) 2, pp. 1009-1013	

Examiner	2770	Date	1014010000
Signature	/Peter Choi/	Considered	10/16/2009

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

1 This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Receipt date: 11/21/2007

PTO/SB/08B (09-06)
Approved for use through 03/31/2007. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

	te for form 1449/PTO				Complete if Known	
Ouboutu	10 10 10 111 1440 17 10			Application Number	10/576,134	
INF	ORMATION	I DIS	CLOSURE	Filing Date	July 13, 2007	
STATEMENT BY APPLICANT				First Named Inventor	Enrique V. Barrera	
	(Use as many she	note se n	acassan/i	Art Unit	1703	
	1030 as many sne	ous as II	ocossai y,	Examiner Name	Unknown	
Sheet	4	of	5	Attorney Docket Number	11321-P074WOUS	

		NON PATENT LITERATURE DOCUMENTS	
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T²
	21	GEORGAKILAS et al, "Organic Functionalization of Carbon Nanotubes," J. Am. Chem. Soc., (2002) 124, pp. 760-761	
	22	BARRERA, "Key Methods for Developing Single-Wall Nanotube Composites," JOM (2000) 52, pp. 38-42	
	23	ZHU et al, "Improving the Dispersion and Integration of Single-Walled Carbon Nanotubes in Epoxy," Nano Lett., (2003) 3, pp. 1107-1113	
	24	ZHU et al, "Reinforcing Epoxy Polymer Composites Through Covalent Integration," Adv. Funct. Mater. (2004) 14, pp. 643-648	
	25	PANTAROTTO et al, "Synthesis Structural Characterization, and Immunological Properties of Carbon Nanotubes," J.Am. Chem. Soc. (2003) 125, pp. 6160-6164	i I
	26	ZHANG et al, "Sidewall Functionalization of Single-Walled Carbon Nanotubes with Hydroxl," Chem. Mater., (2004) 16, pp. 2055-2061	
	27	EBBESEN, "Carbon Nanotubes," Annu. Rev. Mater. Sci. (1994) 24, pp. 235-264	
	28	THESS et al., "Crystalline Ropes of Metallic Carbon Nanotubes," Science (1996) 273, pp. 483-487	
	29	VANDER WAL et al., "Flame Synthesis of Fe Catalyzed Single-Walled Carbon Nanotubes and Ni Catalyzed Nanofibers," Chem. Phys. Lett. (2001) 349, pp. 178-184	
	30	ANDERSON et al., "Analysis of Silicones," A.L. Smith, editor, Wiley-Interscience, New York (1974) Chapter 10	

Examiner		Date	1011010000
Signature	/Peter Choi/	Considered	10/16/2009

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO:

Receipt date: 11/21/2007

PTO/SB/08B (09-06)
Approved for use through 03/31/2007. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449/PTO	Complete if Known		
	Application Number	10/576,134	
INFORMATION DISCLOSURE	Filing Date	July 13, 2007	
STATEMENT BY APPLICANT	First Named Inventor	Enrique V. Barrera	
(Use as many sheets as necessary)	Art Unit	1703	
(coo as many anocas as necessary)	Examiner Name	Unknown	
Sheet 5 of 5	Attorney Docket Number	11321-P074WOUS	

		NON PATENT LITERATURE DOCUMENTS	
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	31	Mickelson et al, "Fluorination of Single-Wall Carbon Nanotubes," Chem. Phys. Lett. (1998) 296, pp. 188-194	
	32	Lau, "Effectiveness of using carbon nanotubes as nano-reinforcements for advanced composite structures," Carbon (2002) 40, pp. 1605-1606	
	33	VELASCO-SANTOS et al., "Chemical Functionalization of Carbon Nanotubes Through an Organosilane," Nanotechnology (2002) 13, pp. 495-498	
	34	CHIANG, I. W. Ph.D. Thesis, Rice University, Houston, TX (2001) pp. 1-171	
84000000000000000000000000000000000000			

Examiner	(5)	Date	
Signature	/Peter Choi/	Considered	10/16/2009

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.